WHAT IS CLAIMED IS:

1. A process for concentrating polymers by evaporation comprising

(i) obtaining a mixture containing a polymer and volatile component, the volatile component being present in the mixture at an amount less than 20 wt.% relative to the weight of the mixture, and

(ii) introducing the mixture in a downward direction under pressure through a plurality of nozzles arranged vertically and next to one another into a degassing container to form an extrudate,

wherein the volatile component contains at least one member selected from the group consisting of residual monomers, oligomers and solvents, and wherein the throughput of the mixture per nozzle is 0.3 to 2 kg/h, the vapor pressure of the volatile component of the extrudate is more than 2.5 bar, and the absolute pressure in the degassing container is 50 to 5000 Pa.

2. The process according to Claim 1, wherein the plurality of nozzles refers to 1500 to 5000 nozzles per square meter.

3. The process according to Claim 2, wherein each nozzle has a free cross-sectional area of 0.3 to 2 cm^2.

4. The process according to Claim 1 wherein the mixture is heated, before entering the nozzles, by subjecting it to residence time of 0.5 to 3 minutes in a heat exchanger having channels.

5. The process according to Claim 4, wherein the heat exchanger contains a static mixing device.

6. The process of Claim 5 wherein the static mixing device is a helical mixer.

7. The process of Claim 6 wherein the helical mixer has an internal diameter of 7 to 15 mm and length of 100 to 500 mm.

8. The process according to Claim 4, characterized in that the heat exchanger is in the form of round tubes flattened in the middle the tubes having an internal diameter before deformation of 8 to 15 mm, and length of 200 to

1000 mm the flattenning creating an internal gap of 2.5 to 6 mm.

9. The process of Claim 1 wherein the polymer is a homo- or copolymer of styrene.

10. The process of Claim 9 wherein the copolymer is selected from the group consisting of styrene/acrylonitrile, styrene/methyl methacrylate, styrene/methyl methacrylate/acrylonitrile, α-methyl styrene/acrylonitrile, styrene/α-methyl styrene/acrylonitrile, styrene/N-phenyl maleimide and styrene/N-phenyl maleimide/acrylonitrile.

11. The process according to Claim 1 wherein the polymer is a rubber-modified homo- or copolymer of styrene.

12. The process of Claim 11 wherein the copolymer is selected from the group consisting of styrene/acrylonitrile, styrene/methyl methacrylate, styrene/methyl methacrylate/acrylonitrile, α-methyl styrene/acrylonitrile, styrene/α-methyl styrene/acrylonitrile, styrene/N-phenyl maleimide and styrene/N-phenyl maleimide/acrylonitrile.

13. The polymer prepared by the process of Claim 1 characterized in that it contains volatile-component in an amount of less than 300 ppm.

14. The process of Claim 10 wherein the copolymer contains vinyl-aromatic in an amount of 40 to 85 % relative to its weight.

15. The process of Claim 10 wherein the copolymer is a member selected from the group consisting of styrene-acrylonitrile and α-methyl styrene/acrylonitrile.

16. The process of Claim 15 wherein the copolymer contains vinyl-aromatic in an amount of 67 to 84 % and acrylonitrile in an amount of 16 to 33 % relative to its weight.

17. The process according to Claim 1, wherein the plurality of nozzles are arranged in a single plane.

18. The process according to Claim 4, wherein each channel is connected directly to a separate nozzle.